Revision: 0
July 1994

ecology and environment, inc.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Project: Chicago Debris Pile Sites 2100 S. Kostner / [redacted]

Project No.: 505-9602-002/003/004 — KJ5100

TDD/PAN No.: Kostner: 6FACO1TA [redacted]

Project Location: 2100 S. Kostner [redacted] Chicago, IL.

Proposed Date of Field Activities: Feb 8 & 9 1996

Project Director: Tom Kouris

Project Manager: Donovan Robb

Prepared by: Donovan Robb / Nabil Fayoumi Date Prepared: Feb 7, 1996

Approved by: Donald W. Bagg Date Approved: 2-7-96

Exhibit One

STATEMENT OF WORK FOR SUBCONTRACT OF BACKHOE WITH OPERATOR

2100 S. Kostner Site TDD: S05-9602-002

[redacted]

A. BACKGROUND

Ecology and Environment, Inc., (E & E), has been tasked by Region 5 United States Environmental Protection Agency (U.S. EPA) to conduct site assessments at three sites in Chicago, Cook County, Illinois. The addresses for the sites are as follows:

2100 S. Kostner, Chicago, Illinois

[redacted]

The sites are comprised of construction and demolition debris waste piles. The exact nature of the material disposed on site is not known. Hazardous materials which may be encountered in the waste piles include: metals, volatile organic compounds, polychlorinated biphenyls (PCBs), and asbestos. Sampling will be conducted to determine if materials in the waste piles will require disposal as hazardous waste.

Analytical parameters for the samples have been chosen based upon disposal requirements of the Resource Conservation and Recovery Act (RCRA). Analytical parameters include: RCRA metals by Toxicity Characteristics Leaching Procedure (TCLP); TCLP organics; PCBs; and asbestos, if applicable. Additional parameters may be analyzed at a later date, if necessary.

B. SCOPE OF WORK

U.S. EPA has requested that E & E obtain a subcontractor for excavation of test pits at the three sites to aid in sampling material beneath the surface of the pile (ground surface will not be broken). This will involve the use of a backhoe (Cat-215 excavator or equivalent) to move concrete and other debris, and to excavate a pit at a depth of 1 and 5 feet deep to allow access to interior materials. Cuttings will be returned to the excavated area following collection of the sample. The number of pits required, the locations of the pits, and the dimensions of the pits will be determined on site.

Work will begin at 0800 on February 8, 1996, at the 2100 S. Kostner Site, and is expected to be completed on February 9, 1996.

1. INTRODUCTION

1.1 POLICY

It is E & E's policy to ensure the health and safety of its employees, the public, and the environment during the performance of work it conducts. This site-specific health and safety plan (SHASP) establishes the procedures and requirements to ensure the health and safety of E & E employees for the above-named project. E & E's overall safety and health program is described in *Corporate Health and Safety Program for Toxic and Hazardous Substances* (CHSP). After reading this plan, applicable E & E employees shall read and sign E & E's Site-Specific Health and Safety Plan Acceptance form.

This SHASP has been developed for the sole use of E & E employees and is not intended for use by firms not participating in E & E's training and health and safety programs. Subcontractors are responsible for developing and providing their own safety plans.

This SHASP has been prepared to meet the following applicable regulatory requirements and guidance:

Applicable Regulation/Guidance
29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)
Other:

1.2 SCOPE OF WORK

Description of Work: Will use backhoe to excavate test pits for sampling soils from waste pile

Equipment/Supplies: Attachment 1 contains a checklist of equipment and supplies that will be needed for this work.

The following is a description of each numbered task:

Task Number	Task Description
1	EXCAVATION
2	Soil sampling
3	Reconnaissance

1.3 SITE DESCRIPTION

Site Map: A site map or sketch is attached at the end of this plan.

Site History/Description (see project work plan for detailed description): See p. 2

Is the site currently in operation? ☐ Yes ☒ No

Locations of Contaminants/Wastes: waste piles, construction debris

Types and Characteristics of Contaminants/Wastes:

☐ Liquid	☒ Solid	☐ Sludge	☐ Gas/Vapor
☐ Flammable/Ignitable	☐ Volatile	☐ Corrosive	☐ Acutely Toxic
☐ Explosive	☐ Reactive	☒ Carcinogenic (Possible)	☐ Radioactive
☐ Medical/Pathogenic	Other:	Asbestos	

2. ORGANIZATION AND RESPONSIBILITIES

E & E team personnel shall have on-site responsibilities as described in E & E's standard operating procedure (SOP) for Site Inspection. The project team, including qualified alternates, is identified below.

Name	Site Role/Responsibility
Donovan Robin	Project/Task Manager
Nabil Fayoumi	Site Safety Officer

3. TRAINING

Prior to work, E & E team personnel shall have received training as indicated below. As applicable, personnel shall have read the project work plan, sampling and analysis plan, and/or quality assurance project plan prior to project work.

Training	Required
40-Hour OSHA HAZWOPER Initial Training and Annual Refresher (29 CFR 1910.120)	X
Annual First Aid/CPR	X
Hazard Communication (29 CFR 1910.1200)	X
40-Hour Radiation Protection Procedures and Investigative Methods	—

Training	Required
8-Hour General Radiation Health and Safety	–
Radiation Refresher	–
DOT and Biannual Refresher	–
Other:	–

4. MEDICAL SURVEILLANCE

4.1 MEDICAL SURVEILLANCE PROGRAM

E & E field personnel shall actively participate in E & E's medical surveillance program as described in the CHSP and shall have received, within the past year, an appropriate physical examination and health rating.

E & E's health and safety record (HSR) form will be maintained on site by each E & E employee for the duration of his or her work. E & E employees should inform the site safety officer (SSO) of any allergies, medical conditions, or similar situations that are relevant to the safe conduct of the work to which this SHASP applies.

4.2 RADIATION EXPOSURE

4.2.1 External Dosimetry

Thermoluminescent Dosimeter (TLD) Badges: TLD badges are required to be worn by all E & E field personnel on all E & E sites.

Pocket Dosimeters: – N/A

Other: N/A

4.2.2 Internal Dosimetry

☐ Whole body count ☐ Bioassay ☐ Other

Requirements: N/A

4.2.3 Radiation Dose

Dose Limits: E & E's radiation dose limits are stated in the CHSP. Implementation of these dose limits may be designated on a site-specific basis.

Site-Specific Dose Limits:

ALARA Policy: Radiation doses to E & E personnel shall be maintained as low as reasonably achievable (ALARA), taking into account the work objective, state of technology available, economics of improvements in dose reduction with respect to overall health and safety, and other societal and socioeconomic considerations.

5. SITE CONTROL

5.1 SITE LAYOUT AND WORK ZONES

Site Work Zones: Refer to the map or site sketch, attached at the end of this plan, for designated work zones.

Site Access Requirements and Special Considerations: To be determined

Illumination Requirements: N/A (daylight)

Sanitary Facilities (e.g., toilet, shower, potable water): N/A

On-Site Communications: N/A

Other Site-Control Requirements: N/A

5.2 SAFE WORK PRACTICES

Daily Safety Meeting: A daily safety meeting will be conducted for all E & E personnel and documented on the Daily Safety Meeting Record form or in the field logbook. The information and data obtained from applicable site characterization and analysis will be addressed in the safety meetings and also used to update this SHASP, as necessary.

Work Limitations: Work shall be limited to a maximum of 12 hours per day. If 12 consecutive days are worked, at least one day off shall be provided before work is resumed. Work will be conducted in daylight hours unless prior approval is obtained and the illumination requirements in 29 CFR 1910.120(m) are satisfied.

Weather Limitations: Work shall not be conducted during electrical storms. Work conducted in other inclement weather (e.g., rain, snow) will be approved by project management and the regional safety coordinator or designee.

Other Work Limitations: If asbestos sample needs to be performed, contact E&E H&S.

Buddy System: Field work will be conducted in pairs of team members according to the buddy system.

Line of Sight: Each field team member shall remain in the line of sight and within verbal communication of at least one other team member.

Eating, Drinking, and Smoking: Eating, drinking, smoking, and the use of tobacco products shall be prohibited in the exclusion and contamination reduction areas, at a minimum, and shall only be permitted in designated areas.

Contamination Avoidance: Field personnel shall avoid unnecessary contamination of personnel, equipment, and materials to the extent practicable.

Sample Handling: Protective gloves of a type designated in Section 7 will be worn when containerized samples are handled for labeling, packaging, transportation, and other purposes.

Vermiculite Handling: Respiratory protection (i.e., high-efficiency particulate air filtration) is recommended when vermiculite is used to package samples into shipping containers (some vermiculite contains low concentrations of asbestos).

Other Safe Work Practices: _____

6. HAZARD EVALUATION AND CONTROL

6.1 PHYSICAL HAZARD EVALUATION AND CONTROL

Potential physical hazards and their applicable control measures are described in the following table for each task.

Hazard	Task Number	Hazard Control Measures
Biological (flora, fauna, etc.)		• Potential hazard: _____ • Establish site-specific procedures for working around identified hazards. • Other: _____
Cold Stress	1 - 2 - 3 -	• Provide warm break area and adequate breaks. • Provide warm noncaffeinated beverages. • Promote cold stress awareness. • See *Cold Stress Prevention and Treatment* (attached at the end of this plan if cold stress is a potential hazard).
Compressed Gas Cylinders		• Use caution when moving or storing cylinders. • A cylinder is a projectile hazard if it is damaged or its neck is broken. • Store cylinders upright and secure them by chains or other means. • Other: _____
Confined Space		• Ensure compliance with 29 CFR 1910.146. • See SOP for Confined Space Entry. Additional documentation is required. • Other: _____
Drilling		• See SOP for Health and Safety on Drilling Rig Operations. Additional documentation may be required. • Other: _____ • Other: _____
Drums and Containers		• Ensure compliance with 29 CFR 1910.120(j). • Consider unlabeled drums or containers to contain hazardous substances and handle accordingly until the contents are identified. • Inspect drums or containers and assure integrity prior to handling. • Move drums or containers only as necessary; use caution and warn nearby personnel of potential hazards. • Open, sample, and/or move drums or containers in accordance with established procedures; use approved drum/container-handling equipment. • Other: _____

Hazard	Task Number	Hazard Control Measures
Electrical		• Ensure compliance with 29 CFR 1910 Subparts J and S. • Locate and mark energized lines. • De-energize lines as necessary. • Ground all electrical circuits. • Guard or isolate temporary wiring to prevent accidental contact. • Evaluate potential areas of high moisture or standing water and define special electrical needs. • Other: _____
Excavation and Trenching	1	• Ensure that excavations comply with and personnel are informed of the requirements of 29 CFR 1926 Subpart P. • Ensure that any required sloping or shoring systems are approved as per 29 CFR 1926 Subpart P. • Identify special personal protective equipment (PPE) (see Section 7) and monitoring (see Section 8) needs if personnel are required to enter approved excavated areas or trenches. • Maintain line of sight between equipment operators and personnel in excavations/trenches. Such personnel are prohibited from working in close proximity to operating machinery. • Suspend or shut down operations at signs of cave in, excessive water, defective shoring, changing weather, or unacceptable monitoring results. • Other: _____ • Other: _____
Fire and Explosion		• Inform personnel of the location(s) of potential fire/explosion hazards. • Establish site-specific procedures for working around flammables. • Ensure that appropriate fire suppression equipment and systems are available and in good working order. • Define requirements for intrinsically safe equipment. • Identify special monitoring needs (see Section 8). • Remove ignition sources from flammable atmospheres. • Coordinate with local fire-fighting groups regarding potential fire/explosion situations. • Establish contingency plans and review daily with team members. • Other: _____
Heat Stress		• Provide cool break area and adequate breaks. • Provide cool noncaffeinated beverages. • Promote heat stress awareness. • Use active cooling devices (e.g., cooling vests) where specified. • See *Heat Stress Prevention and Treatment* (attached at the end of this plan if heat stress is a potential hazard).
Heavy Equipment Operation	1	• Define equipment routes, traffic patterns, and site-specific safety measures. • Ensure that operators are properly trained and equipment has been properly inspected and maintained. Verify back-up alarms. • Ensure that ground spotters are assigned and informed of proper hand signals and communication protocols. • Identify special PPE (Section 7) and monitoring (Section 8) needs.

Hazard	Task Number	Hazard Control Measures
		• Ensure that field personnel do not work in close proximity to operating equipment. • Ensure that lifting capacities, load limits, etc., are not exceeded. • Other: _____
Heights (Scaffolding, Ladders, etc.)		• Ensure compliance with applicable subparts of 29 CFR 1910. • Identify special PPE needs (e.g., lanyards, safety nets, etc.) • Other: _____
Noise	1	• Establish noise level standards for on-site equipment/operations. • Inform personnel of hearing protection requirements (Section 7). • Define site-specific requirements for noise monitoring (Section 8). • Other: _____
Overhead Obstructions	1-3 M	• Wear hard hat. • Other: Debris from Surrounding Piles
Power Tools		• Ensure compliance with 29 CFR 1910 Subpart P. • Other: _____
Sunburn		• Apply sunscreen. • Wear hats/caps and long sleeves. • Other: _____
Utility Lines	1	• Identify/locate existing utilities prior to work. • Ensure that overhead, underground, and nearby utility lines are at least 25 feet away from project activities. • Contact utilities to confirm locations, as necessary. • Other: _____
Weather Extremes	1 2 3	• Potential hazards: _____ • Establish site-specific contingencies for severe weather situations. • Provide for frequent weather broadcasts. • Weatherize safety gear, as necessary (e.g., ensure eye wash units cannot freeze, etc.). • Identify special PPE (Section 7) needs. • Discontinue work during severe weather. • Other: _____
Other:		• _____ • _____
Other:		• _____ • _____

6.2 CHEMICAL HAZARD EVALUATION AND CONTROL

6.2.1 Chemical Hazard Evaluation

Potential chemical hazards are described by task number in Table 6-1. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Table 6-1

CHEMICAL HAZARD EVALUATION

Task Number	Compound	Exposure Limits (TWA) PEL	REL	TLV	Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/ Description	FID/PID Relative Response	FID/PID Ioniz. Poten. (eV)
1 & 2	lead	.05 mg/m³	-	.15 mg/m³	Y	Inh, Ing, eye, skin	coughing, irritation of tissues.	—	—	—
"	Cadmium	4ppm	-	1ppm	Y	Inh, Ing, eye, skin	nausea, vomiting	—	—	—
"	Benzene*	1ppm	0.1	10ppm	Y	Inh, Ing, eye, skin	GID, HA, NAU, Dizziness, Irritation of tissues	4.68 ppm Aromatic	150 & 100 %	9.25
"	PCB 1242*	1mg/m³	0.0001	1mg/m³	Y	Inh, Ing, eye, skin	Irritation of tissues	— Buttery	— —	— —
"	Asbestos	~~0.2~~ 0.1 f/cm³	0.1 Fiber/cm³	0.1 Fiber/cm³	N	Inh, Ing, eye, skin.	none	—	-	-
"	PNAs*	0.2 mg/m³	-	—	Y	Inh, eye, skin	irritation of tissues	—	—	—

Note: Use an asterisk (*) to indicate known or suspected carcinogens.

6.2.2 Chemical Hazard Control

An appropriate combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below published exposure levels (see Section 6.2.1).

Applicable Engineering/Administrative Control Measures: N/A

PPE: See Section 7.

6.3 RADIOLOGICAL HAZARD EVALUATION AND CONTROL

6.3.1 Radiological Hazard Evaluation

Potential radiological hazards are described below by task number. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Task Number	Radionuclide	DAC (μCi/ml)	Route(s) of Exposure	Major Radiation(s)	Energy(s) (MeV)	Half-Life
1 2 3	NA					
1 2 3	NA					
1 2 3	NA					

6.3.2 Radiological Hazard Control

Engineering/administrative controls and work practices shall be instituted to reduce and maintain employee exposures to a level at or below the permissible exposure/dose limits (see sections 4.2.3 and 6.3.1). Whenever engineering/administrative controls and work practices are not feasible or effective, any reasonable combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below permissible exposure/dose limits.

Applicable Engineering/Administrative Control Measures: N/A

PPE: See Section 7.

7. LEVEL OF PROTECTION AND PERSONAL PROTECTIVE EQUIPMENT

7.1 LEVEL OF PROTECTION

The following levels of protection (LOPs) have been selected for each work task based on an evaluation of the potential or known hazards, the routes of potential hazard, and the performance specifications of the PPE. On-site monitoring results and other information obtained from on-site activities will be used to modify these LOPs and the PPE, as necessary, to ensure sufficient personnel protection. The authorized LOP and PPE shall only be changed with the approval of the regional safety coordinator or designee. Level A is not included below because Level A activities, which are performed infrequently, will require special planning and addenda to this SHASP.

Task Number	B	C	D	Modifications Allowed
1&2		(X) -	----X	

Note: Use "X" for initial levels of protection. Use "(X)" to indicate levels of protection that may be used as site conditions warrant.

7.2 PERSONAL PROTECTIVE EQUIPMENT

The PPE selected for each task is indicated below. E & E's PPE program complies with 29 CFR 1910.120 and 29 CFR 1910 Subpart I and is described in detail in the CHSP. Refer to 29 CFR 1910 for the minimum PPE required for each LOP.

PPE	Task Number/LOP					
	1&2	3				
Full-face APR	(X)	X				
PAPR						
Cartridges:						
H						
GMC-H	X	X				
GMA-H						
Other: HEPA	X					
Positive-pressure, full-face SCBA						
Spare air tanks (Grade D air)						
Positive-pressure, full-face, supplied-air system						
Cascade system (Grade D air)						
Manifold system						
5-Minute escape mask						
Safety glasses	X	X				
Monogoggles						
Coveralls/clothing	X	X				

PPE	Task Number/LOP					
	1&2	3				
Protective clothing:						
Tyvek	X	X				
Saranex						
Other:						
Splash apron						
Inner gloves:						
Cotton - WARM	X	X				
Nitrile						
Latex						
Other:						
Outer gloves:						
Viton						
Rubber						
Neoprene						
Nitrile						
Other: LATEX	X	X				
Work gloves	X	X				
Safety boots (as per ANSI Z41)	X	X				
Neoprene safety boots (as per ANSI Z41)						
Boot covers (type: LATEX)	X	X				
Hearing protection (type:)						
Hard hat	X	X				
Face shield						
Other:						
Other:						

8. HEALTH AND SAFETY MONITORING

Health and safety monitoring will be conducted to ensure proper selection of engineering/administrative controls, work practices, and/or PPE so that employees are not exposed to hazardous substances at levels that exceed permissible exposure/dose limits or published exposure levels. Health and safety monitoring will be conducted using the instruments, frequency, and action levels described in Table 8-1. Health and safety monitoring instruments shall have been appropriately calibrated and/or performance-checked prior to use.

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]	
☐ PID (e.g., HNu IS-101) ☒ FID (e.g., OVA 128-GC)	1 8 2 3	Benzene	On-Site	(continuous)	**Unknown Vapors** Background to 1 ppm: Level D 1 to 5 ppm above background: Level C 5 to 500 ppm above background: Level B >500 ppm above background: Level A	**Contaminant-Specific** —
Oxygen Meter/Explosimeter					**Oxygen** <19.5% or >25.0%: Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 25.0%: Continue work in accordance with action levels for other instruments.	**Explosivity** ≤10% LEL: Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL: Evacuate area; eliminate ignition sources; reassess conditions.
Radiation Alert Monitor (Rad-mini or RAM-4)					<0.1 mR/hr: Continue work in accordance with action levels for other instruments. ≥0.1 mR/hr: Evacuate area; reassess work plan and contact radiation safety specialist.	
Mini-Ram Particulate Monitor	1 8 2 3	Lead, Cadmium ~~in~~ PCB; ~~in~~ in dust			**General/Unknown** Evaluate health and safety measures when dust levels exceed 2.5 milligrams per cubic meter.	**Contaminant-Specific**
HCN/H_2S (Monitox)					≥4 ppm: Leave area and consult with SSO.	
Draeger Colorimetric Tubes					**Tube** **Action Level** **Action**	

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]
Air Monitor/Sampler Type:_____ Sampling medium: _____	—				**Action Level** **Action**
Personal Sampling Pump Type:_____ Sampling medium: _____	—				**Action Level** **Action**
Micro R Meter	—				<2 mR/hr: Continue work in accordance with action levels for other instruments. 2 to 5 mR/hr: In conjunction with a radiation safety specialist, continue work and perform stay-time calculations to ensure compliance with dose limits and ALARA policy. >5 mR/hr: Evacuate area to reassess work plan and evaluate options to maintain personnel exposures ALARA and within dose limits.
Ion Chamber	—				See micro R meter action levels above.
Radiation Survey Ratemeter/Scaler with External Detector(s)	—				**Detector** **Action Level** **Action**
Noise Dosimeter (Sound Level Meter)	—				≤85 decibels as measured using the A-weighed network (dBa): Use hearing protection if exposure will be sustained throughout work shift. >85 dBA: Use hearing protection. >120 dBA: Leave area and consult with safety personnel.
Other:					
Other:					

[a] Unless stated otherwise, airborne contaminant concentrations are measured as a time-weighted average in the worker's breathing zone. Acceptable concentrations for known airborne contaminants will be determined based on OSHA/NIOSH/ACGIH and/or NRC exposure limits.

9. DECONTAMINATION PROCEDURES

All equipment, materials, and personnel will be evaluated for contamination upon leaving the exclusion area. Equipment and materials will be decontaminated and/or disposed and personnel will be decontaminated, as necessary. Decontamination will be performed in the contamination reduction area or any designated area such that the exposure of uncontaminated employees, equipment, and materials will be minimized. Specific procedures are described below.

Equipment/Material Decontamination Procedures (specified by work plan): none required.

Ventilation: All decontamination procedures will be conducted in a well-ventilated area.

Personnel Decontamination Procedures: 1 Remove Duct tape (make sure all Equipment is set up to Recon) 2. Remove tyvek & place into ~~Disposal~~ Contain. trash. 3 Remove face mask & Respirator & gloves

PPE Requirements for Personnel Performing Decontamination: Latex & Booties (Latex)

Personnel Decontamination in General: Following appropriate decontamination procedures, all field personnel will wash their hands and face with soap and potable water. Personnel should shower at the end of each work shift.

Disposition of Disposable PPE: Disposable PPE must be rendered unusable and disposed as indicated in the work plan.

Disposition of Decontamination Wastes (e.g., dry wastes, decontamination fluids, etc.):

10. EMERGENCY RESPONSE

This section contains additional information pertaining to on-site emergency response and does not duplicate pertinent emergency response information contained in earlier sections of this plan (e.g., site layout, monitoring equipment, etc.). Emergency response procedures will be rehearsed regularly, as applicable, during project activities.

10.1 EMERGENCY RESPONSIBILITIES

All Personnel: All personnel shall be alert to the possibility of an on-site emergency; report potential or actual emergency situations to the team leader and SSO; and notify appropriate emergency resources, as necessary.

Team Leader: The team leader will determine the emergency actions to be performed by E & E personnel and will direct these actions. The team leader also will ensure that applicable incidents are reported to appropriate E & E and client project personnel and government agencies.

SSO: The SSO will recommend health/safety and protective measures appropriate to the emergency.

Other: —

10.2 LOCAL AND SITE RESOURCES (including phone numbers)

Ambulance: 911

Sites: Kearney, [redacted] USE Hosp Hospital: Mt. Sinai Hosp Medical Centre 1500 S. California / use Norwegian-American Hosp [redacted]

Directions to Hospital (map attached at the end of this plan): See Attached

Poison Control: 1-800-942-5969

Police Department: 911

Fire Department: 911

Client Contact: [redacted]

Site Contact: Some

On-Site Telephone Number: None

Cellular Telephone Number: [redacted]

Radios Available: No

Other: N/A

10.3 E & E EMERGENCY CONTACTS

E & E Emergency Response Center (24 Hours):	716/684-8940
Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) [redacted]
Dr. Raymond Harbison:	501/221-0465 (University of Arkansas) 501/370-8263 (24-hour service) 904/462-3277, 3281 (University of Florida)
Regional Safety Coordinator, Dean Tiebout:	312/663-9415 (office) [redacted]
Regional Office Manager, Jerome Oskvarek:	312/663-9415 (office) [redacted]

10.4 MED-TOX HOTLINE

The Med-Tox hotline is activated and accessed as follows:

1. Call 501/370-8263.

2. State, "This is an emergency."

3. Provide:

   - Your name, region, and site.
   - Your telephone number.
   - Your location.
   - Name of injured or exposed person.
   - Nature of the emergency.
   - Action(s) taken.

4. When a toxicologist (Dr. Raymond Harbison or associate) returns your call (should be within 15 minutes), repeat the above information.

5. If a toxicologist does not return your call within 15 minutes, call the following in order until contact is made:

   a. E & E Emergency Response Center: 716/684-8940

   b. Corporate Health and Safety Director, Dr. Paul Jonmaire: 716/684-8060 (office) [redacted]

   c. Corporate Safety Officer, Tom Siener: 716/684-8060 (office) [redacted]

10.5 OTHER EMERGENCY RESPONSE PROCEDURES

On-Site Evacuation Signal/Alarm (must be audible and perceptible above ambient noise and light levels): To be determined

On-Site Assembly Area: TBD

Emergency Egress Route to Get Off Site: TBD

Off-Site Assembly Area: TBD

Preferred Means of Reporting Emergencies: Ø Car phone (If available)

Site Security and Control: In an emergency situation, personnel will attempt to secure the affected area and control site access.

Emergency Decontamination Procedures: ~~None~~ gross decon, paper towels.

PPE: Personnel will don appropriate PPE when responding to an emergency situation. The SSO and Section 7 of this plan will provide guidance regarding appropriate PPE.

Emergency Equipment: Appropriate emergency equipment is listed in Attachment 1. Adequate supplies of this equipment shall be maintained in the support area or other approved work location.

Incident Reporting Procedures: Use Car phone to notify concerned parties.

ATTACHMENT 1
EQUIPMENT/SUPPLIES CHECKLIST

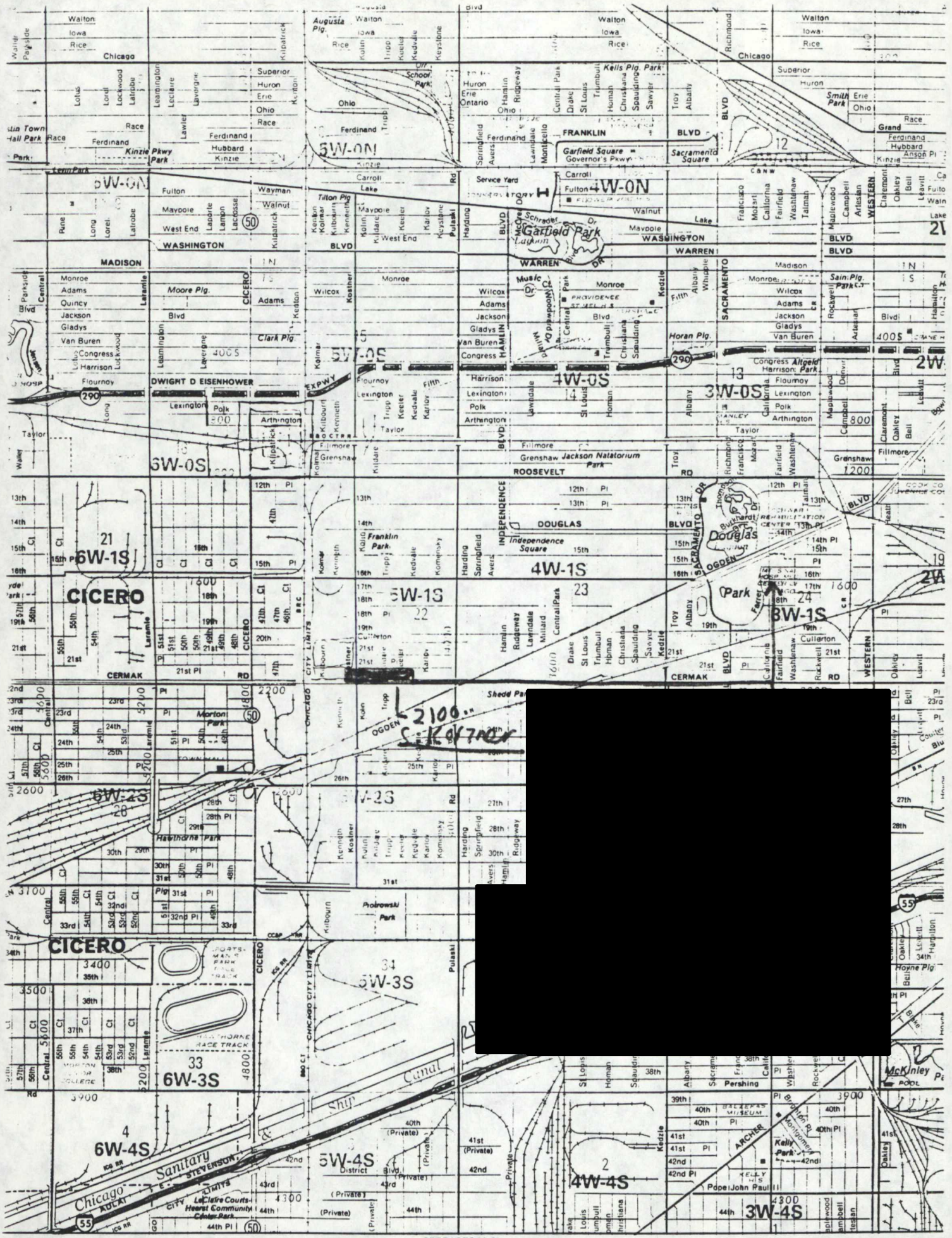
INSTRUMENTATION	No.	EMERGENCY EQUIPMENT	No.
OVA	1	First aid kit	1
Thermal desorber		Stretcher	
O_2/explosimeter w/cal. kit		Portable eye wash	
Photovac tip		Blood pressure monitor	
HNu (probe: _____eV)		Fire blanket	
Magnetometer		Fire extinguisher	
Pipe locator		Thermometer (medical)	
Weather station		Spill kit	
Draeger tube kit (tubes: _____)			
Brunton compass			
Real-time cyanide monitor			
Real-time H_2S monitor			
Heat stress monitor			
Noise equipment		**DECONTAMINATION EQUIPMENT**	
Personal sampling pumps and supplies		Wash tubs	
MiniRam dust monitor	1	Buckets	
Mercury monitor		Scrub brushes	
Spare batteries (type: _____)		Pressurized sprayer	
		Spray bottle	
		Detergent (type: _____)	
RADIATION EQUIPMENT/SUPPLIES		Solvent (type: _____)	
Documentation forms		Plastic sheeting	
Portable ratemeter		Tarps and poles	
Scaler/ratemeter		Trash bags	X
1" NaI gamma probe		Trash cans	
2" NaI gamma probe		Masking tape	
ZnS alpha probe		Duct tape	X
GM pancake probe		Paper towels	X
Tungsten-shielded GM probe		Face mask	
Micro R meter		Face mask sanitizer	
Ion chamber		Step ladders	
Alert monitor		Distilled water	
Pocket dosimeter		Deionized water	
Dosimeter charger			
Radiation warning tape			
Radiation decon supplies			
Spare batteries (type: _____)			

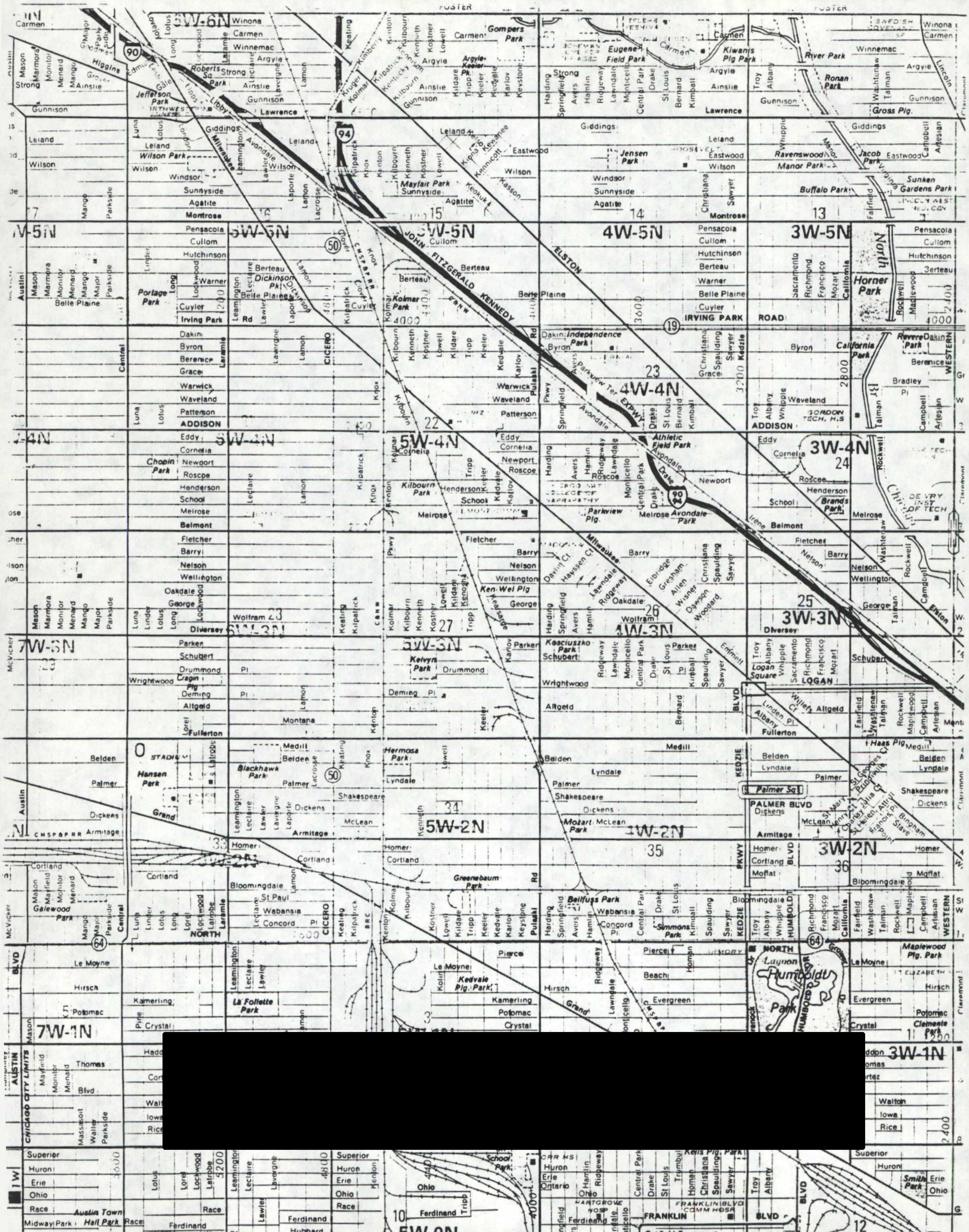
ATTACHMENT 1
EQUIPMENT/SUPPLIES CHECKLIST

SAMPLING EQUIPMENT		MISCELLANEOUS (Cont.)	
8-oz. bottles		Gatorade or equivalent	
Half-gallon bottles		Tables	
VOA bottles		Chairs	
String		Weather radio	
Hand bailers		Two-way radios	
Thieving rods with bulbs		Binoculars	
Spoons		Megaphone	
Knives		Cooling vest	
Filter paper			
Bottle labels			
		SHIPPING EQUIPMENT	
		Coolers	X
MISCELLANEOUS		Paint cans with lids, 7 clips each	
Pump		Vermiculite	X
Surveyor's tape	X	Shipping labels	
~~100' Fiberglass tape~~ Rolo-Tape	X	DOT labels:	
300' Nylon rope		"Up"	
Nylon string		"Danger"	
Surveying flags		"Inside Container Complies ..."	
Camera		Hazard Group	
Film		Strapping tape	X
Bung wrench		Baggies	X
Soil auger	X	Custody seals	X
Pick	X	Chain-of-custody forms	X
Shovel	X	Federal Express forms	
Catalytic heater		Clear packing tape	X
Propane gas		Permanent markers	X
Banner tape			
Surveying meter stick			
Chaining pins and ring			
Logbooks (X large, ____ small)	X		
Required MSDSs			
Intrinsically safe flashlight			
Potable water			

2100 S. KOSTNER, EXIT SIXE SOUTH TO CERMAK, GO EAST ON CERMAK TO CALIFORNIA, THEN NORTH TO HOSPITAL

225
8800


Walton
Iowa
Rice
Chicago
Augusta Plg.
Off School Park
Ohio
Ferdinand
Kinzie Pkwy Park
5W-0N
Kells Plg. Park
FRANKLIN
BLVD
Garfield Square
Governor's Pkwy
Sacramento Square
Smith Park
Grand
Hubbard
Anson Pl
Carroll
Lake
Service Yard
4W-0N
Fulton
Wayman
Walnut
Tilton Plg.
Maypole
West End
WASHINGTON
MADISON
WARREN
Garfield Park
Lagoon
Conservatory
Schrader Dr
Music Ct
Monroe
Adams
Quincy
Jackson
Gladys
Van Buren
Congress
Harrison
Moore Plg.
Clark Plg.
CICERO
Laramie
Kostner
Kedzie
Central Park
Drake
St Louis
Trumbull
Homan
Christiana
Spaulding
Sawyer
Troy
Albany
Whipple
Fifth
Horan Plg.
Sain Plg.
Park Ct
Altgeld Park
DWIGHT D EISENHOWER
EXPWY
290
Flournoy
Lexington
Polk
Arthington
Taylor
5W-0S
4W-0S
3W-0S
2W
Fillmore
Grenshaw
Jackson Natatorium Park
ROOSEVELT
RD
Douglas
Douglas Park
Independence
Independence Square
DOUGLAS
Franklin Park
4W-1S
6W-1S
3W-1S
2W-1S
OGDEN
CERMAK
Morton Park
Hawthorne Park
Shedd Park
Piotrowski Park
2100
6W-2S
5W-2S
4W-2S
3W-2S
2W-2S
6W-3S
5W-3S
4W-3S
3W-3S
2W-3S
Hawthorne Race Track
Sanitary & Ship Canal
6W-4S
5W-4S
4W-4S
3W-4S
2W-4S
Chicago
Stevenson
Expwy
Archer
Pershing
McKinley Pool
Kelly Park
Kelly HS
Pope John Paul II
Museum
Hoyne Plg
Morton College
Hearst Community Center Park
LaClaire Courts
City Limits
Chicago City Limits
ICG RR
Private
(Private)
SEE PAGES 60-61



[redacted]

SEE PAGES 56-57

[redacted]

THE SIGMA-ALDRICH LIBRARY OF CHEMICAL SAFETY DATA

Explanation of Codes

PROCEDURES FOR SPILLS OR LEAKS

1 Absorb on sand or vermiculite and place in closed container for disposal.
2 Cover with dry lime, sand, or soda ash. Place in covered containers using nonsparking tools and transport outdoors.
3 Shut off all sources of ignition.
4 Evacuate area.
5 Cover with an activated carbon adsorbent, take up and place in closed container. Transport outdoors.
6 Ventilate area and wash spill site after material pickup is complete.
7 Sweep up, place in a bag and hold for waste disposal.
8 Avoid raising dust.
9 Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.
10 Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
11 Cover with dry lime or soda ash, pick up, keep in a closed container and hold for waste disposal.
12 Carefully sweep up and remove.
13 Flush spill area with copious amounts of water.
14 Mix with solid sodium bicarbonate.
15 Place in appropriate container.
16 Wear protective equipment.
17 Wash spill site with soap solution.
18 Please contact the Technical Services Department. Be sure to mention the name and catalog number of the material.

FIRE-EXTINGUISHING MEDIA

1 Carbon dioxide.
2 Dry chemical powder.
3 Water spray.
4 Alcohol or polymer foam.
5 Class D fire-extinguishing material only.
6 Water may be effective for cooling, but may not effect extinguishment.
7 Carbon dioxide, dry chemical powder, alcohol or polymer foam.
8 Foam and water spray are effective but may cause frothing.
9 Do not use dry chemical powder extinguisher on this material.
10 Do not use carbon dioxide extinguisher on this material.
11 Noncombustible.
12 Do not use water.
13 Use extinguishing media appropriate to surrounding fire condition

ecology and environment

recycled paper

Z14,666-0

Sigma-Aldrich Corporation, P.O. Box 355, Milwaukee, Wisconsin 53201 USA
(Sigma: 314-771-5765; Aldrich: 414-273-3850)

ECOLOGY AND ENVIRONMENT, INC. - CHICAGO

Site Name: _____ PAN/TDD#: _____/_____

Date: _____ Wind Direction: _____ Weather _____

EQUIPMENT	ID#	CALIB./OPER. CHECK	INITIALS & DATE	BACKGROUND READING	ON-SITE READING
OVA					
HNu					
Photovac Tube					
O2 Meter					
Exposimeter					
Combo-meter					
Rad-MINI					
Monitor-4					
Draeger tubes					
Monitox					
OTHERS:					

Attendees at Site: _____

_____

Protective Clothing Worn: _____

_____

Comments on Monitoring or Protective Clothing (ex: Was the monitoring equipment possibly effected by the weather?) _____

_____

_____

Team Leader _____ _____

(Print Name) (Signature) (Date)

Site Safety Officer _____ _____

(Print Name) (Signature) (Date)

Please submit the original to Ron Bugg and a copy to the project file

(Revised 4/3/92)

Vehicle Safety Checklist
Ecology & Environment, Inc.
Chicago Office

Date: _____ Time: _____ Odometer: _____

Vehicle Model: _____ Color: _____ License Plate No. _____

INTERIOR:
____ All Safety Belts-Proper Locking
____ Parking Brake

START ENGINE:
____ Oil Pressure
____ Instrument Panel (Warning Lights or Buzzers)
____ Horn
____ Windshield Viper & Washer
____ Heater/Defroster
____ Mirrors
____ Steering (Loose)
____ Interior Lights
____ Emergency Flashers
____ Starts Properly

FRONT:
____ Headlights (Dim/Bright)
____ Turn Signals
____ Emergency Flashers

REAR:
____ Tail Lights
____ Brake Lights
____ Back up Lights
____ Turn Signals
____ Emergency Flashers

MECHANICAL OPERATION:
____ Engine (misses, knocks, etc.)
____ Check Oil
____ Water/Anti-freeze
____ Viper Fluid
____ Brake Fluid

OUTSIDE:
____ Tires (properly inflated)
____ Gas Tank Cap

EMERGENCY EQUIPMENT:
____ Fire Extinguisher
____ First Aid Kit
____ Flags, Flares,
____ Spare tire (properly inflated)
____ Tire Changing Kit (jack, tools, etc.)

REMARKS:
_____
_____
_____
_____
_____
_____
_____
_____

TEAM MEMBER/OPERATOR: _____ / _____
(print name) signature

SITE NAME/ADDRESS: _____

PAN/JOB NUMBER: _____

RETURN OF VEHICLE TO DUTY STATION

Vehicle Cleanliness: _____

Remarks: _____
_____
_____
_____

Corrections Necessary: _____
_____

TEAM MEMBER/OPERATOR: _____ / _____
(print name) signature

SITE DOSIMETER LOG

PROJECT/PAN # _____ SITE NAME _____

SITE SAFETY OFFICER _____ WEEK OF _____

NAME AND DOSIM. #	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY

To the nearest half-hour, record time spent downrange as "S" (e.g., S:2.5hrs), time spent in active FDS operation as "P", and any time spent downrange in rescue activity as "R".

HS005(2/24/89)

ecology and environment. inc.

JOB NO ZT2051 | HAZARD EVALUATION OF CHEMICALS | PREPARATION/UPDATE DATE 6-09-93

CHEMICAL NAME: LEAD

CAS NUMBER: 7439-92-1 DOT NAME/ID NO.: RQ:
SYNONYMS: WHITE LEAD, PLUMBUM

CHEMICAL AND PHYSICAL PROPERTIES:

CHEMICAL FORMULA: PB MOLECULAR WEIGHT: 207 PHYSICAL STATE: VARIABLE SPG/D 11.3 SOLUBILITY (H20): INSOLUBLE
VAPOR PRESS: VARIABLE FREEZING POINT: BOILING POINT: 3164 F FLASH POINT: INCOMBUST FLAMMABLE LIMITS: INCOMBUS
ODOR CHARACTERISTICS:
INCOMPATABILITIES: STRONG OXIDIZERS, PERIOXIDES, ACTIVE METALS

BIOLOGICAL PROPERTIES:

IDLH: VARIABLE TLV-TWA: .15 mg/M3 PEL: .05mg/m3 ODOR THRESHOLD: NONE
HUMAN (LCLO): RAT/MOUSE (LC50): AQUATIC: UNKNOWN
CARCINOGEN: INDEF TERATOGEN: EXP MUTIGEN: INDEF
ROUTE OF EXPOSURE: [X] INHALATION [X] EYE CONTACT [X] SKIN CONTACT [X] INGESTION

HANDLING RECOMMENDATIONS (PERSONAL PROTECTIVE MEASURES):

5 MG/M3 HIGH EFFICIENCY PARTICULATE RESPIRATOR, OTHER CONCENTRATIONS - SCBA, AVOID SKIN AND EYE CONTACT

MONITORING RECOMMENDATIONS:

HEALTH HAZARDS: SUSPECTED CARCINOGEN. POISON BY INGESTION. MAY CAUSE LOSS OF APPETITE, ANEMIA, MALAISE, INSOMNIA, HEADACHE, IRRITABILITY, MUSCLE AND JOINT PAINS, TREMORS, FLACCID PARALYSIS, HALLUCINATIONS AND DISTORTED PERCEPTIONS, MUSCLE WEAKNESS, GASTRITIS AND LIVER

ACUTE SYMPTOMS: CUMULATIVE NEUROTOXIN-COMMONLY OCCURS FROM PROLONGED EXPOSURE, SYMPTOMS INCLUDE STOMACH DISTRESS, VOMITING, DIARRHEA, BLACK STOOLS, ANEMIA, NERVOUS SYSTEM EFFECTS

CHRONIC SYMPTOMS: 3 CLINICAL TYPES A-AILMENTARY-ABOMINAL PAIN, DISCOMFORT, CONSTIPATION OR DIARRHEA, METALLIC TASTE, LEAD LINE ON GUM, HEADACHE, B-NUEROMUSCULAR, MUSCLE WEAKNESS, JOINT/MUSCLE PAIN, DIZZINESS, INSOMIA, PARALYSIS C-ENCEPHALIC BRAIN INVOLVEMENT, STUPOR, COMA, DEATH, RARE REPRODUCTIVE EFFECTS, HUMAN EPID STUDIES HAVE CONCLUDED THAT LEAD IS A POSION TO MALE & FEMALE GERM CELLS;INCREASED

FIRST AID

INHALATION: REMOVE TO FRESH AIR, GIVE ARTIFICAL RESPIRATION IF NEEDED, SEEK MEDICAL ATTENTION

EYE CONTACT: FLUSH/RINSE WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING; WASH WITH SOAP AND WATER

INGESTION: GIVE LARGE QUANTITIES OF WATER; INDUCE VOMITING; SEEK MEDICAL ATTENTION IMMEDIATELY

DISPOSAL/WASTE TREATMENT:

TOXIC FUMES OF LEAD

REFERENCES CONSULTED: [ ] VERSCHUERAN [ ] MERCK INDEX [X] HAZARDLINE [X] ACGIH [ ] TOXIC & HAZARDOUS SAFETY MANUAL [X] CHRIS [X] SAX
[X] NIOSH/OSHA POCKET GUIDE
[ ] OTHER: ALDRICH, RTECS, SITTIG

ecology and environment, inc.

JOB NO ZT2051 | HAZARD EVALUATION OF CHEMICALS | PREPARATION/UPDATE DATE 5-29-90

CHEMICAL NAME: CADMIUM DUST

CAS NUMBER: 7440-43-9 DOT NAME/ID NO.: RQ:
SYNONYMS: CI 77180

CHEMICAL AND PHYSICAL PROPERTIES:

CHEMICAL FORMULA: CD MOLECULAR WEIGHT: 112.40 PHYSICAL STATE: SOLID SPG/D 8.64 SOLUBILITY (H20): INSOLUBLE
VAPOR PRESS: FREEZING POINT: 609 F BOILING POINT: 1412 F FLASH POINT: FLAMMABLE LIMITS:
ODOR CHARACTERISTICS:
INCOMPATABILIITIES: SULFER SELENIUM, TELLURIUM, ZINC, HYDRAZOIC ACID, AMMONIUM NITRATE, POTASSIUM, OXIDIZING AGENTS & ACID

BIOLOGICAL PROPERTIES:

IDLH: TLV-TWA: 001 PPM PEL: 004 PPM ODOR THRESHOLD:
HUMAN (LCLO): RAT/MOUSE (LC50): AQUATIC:
CARCINOGEN: ANIMAL POS TERATOGEN: MUTIGEN: EXPER
ROUTE OF EXPOSURE: [X] INHALATION [X] EYE CONTACT [X] SKIN CONTACT [X] INGESTION

HANDLING RECOMMENDATIONS (PERSONAL PROTECTIVE MEASURES):

APR DUSTY/WINDY CONDIT OR KNOWN HIGH CONCENT OR 1 BUT 5 PPM SCBA, COVERALL TYVEK, GLOVES BUTYL

MONITORING RECOMMENDATIONS:

HEALTH HAZARDS:

ACUTE SYMPTOMS: NAU/VOMT, DIARRHEA, HEADACHE, MUSC ACHES, SALIVATION, ABDOM PAIN, COUGH FOAM/BLOOD SPUTUM, WEAKNESS, LEG PAIN

CHRONIC SYMPTOMS: NO SENSE OF SMELL, COUGH, DYSPNEA, WEIGHT LOSS, ANEMIA, IRRITABILITY, YELLOW-STAINED TEETH, LIVER/KIDNEY DAMAGE

FIRST AID

INHALATION: REMOVE TO FRESH AIR, GIVE ARTIFICAL RESPIRATION IF NEEDED, SEEK MEDICAL ATTENTION

EYE CONTACT: FLUSH/RINSE WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING; WASH WITH SOAP AND WATER

INGESTION: GIVE MILK; SEEK MEDICAL ATTENTION

DISPOSAL/WASTE TREATMENT:

REFERENCES CONSULTED: [ ] VERSCHUERAN [X] MERCK INDEX [ ] HAZARDLINE [X] ACGIH [ ] TOXIC & HAZARDOUS SAFETY MANUAL [ ] CHRIS [ ] SAX
[X] NIOSH/OSHA POCKET GUIDE
[ ] OTHER: RTECS, SIGMA-ALDRICH, HANDBOOK OF POISONING, OSHA

CHEMICAL NAME: BENZENE

CAS NUMBER: 71-43-2 DOT NAME/ID NO.: RQ:
SYNONYMS: BENZOL, BENZOLE, CYCLOHEXATRIENE, BENZOLENE, BICARBURET OF HYDROGEN, CARBON OIL, COAL NAPHTHA

CHEMICAL AND PHYSICAL PROPERTIES:

CHEMICAL FORMULA: C6H6 MOLECULAR WEIGHT: 78 PHYSICAL STATE: LIQUID SPG/D 0.879 SOLUBILITY (H20): SLIGHTLY
VAPOR PRESS: 75MM FREEZING POINT: 42 F BOILING POINT: 176 F FLASH POINT: 12 F FLAMMABLE LIMITS: 1.3-7.1%
ODOR CHARACTERISTICS: 4.68 PPM
INCOMPATABILIITIES: STRONG OXIDIZERS, CHLORINE, BROMINE

BIOLOGICAL PROPERTIES:

IDLH: TLV TWA. 10 PPM PEL: 1 PPM ODOR THRESHOLD:
HUMAN (LCLO): TCLO 100/CNS RAT/MOUSE (LC50): TCLO 50/ AQUATIC:
CARCINOGEN: HUMAN-SUS TERATOGEN. MUTIGEN: EXPER
ROUTE OF EXPOSURE: [X] INHALATION [X] EYE CONTACT [X] SKIN CONTACT [X] INGESTION

HANDLING RECOMMENDATIONS (PERSONAL PROTECTIVE MEASURES):

10 PPM USE SCBA, USE PROTECTIVE CLOTHING, EXCEL-VITON;GOOD-NEOPRENE, SARANAX; POOR-BUTYL, NATURAL RUBBER FOR GLOVES, AVOID SKIN/EYE CONTACT

MONITORING RECOMMENDATIONS:

HEALTH HAZARDS: CAN CAUSE DIZZINESS, EUPHORIA, GIDDINESS, HEADACHE, NAUSEA, STAGGERING GAIT, WEAKNESS, DROWSINESS, RESPIRATORY IRRITATION, PULMONARY EDEMA AND PNEUMONIA, GASTROINTESTINAL IRRITATION, CONVULSIONS, AND PARALYSIS. CAN ALSO CAUSE IRRITATION TO SKIN, EYES

ACUTE SYMPTOMS: SKIN IRRITANT, CNS DEPRESSANT, MOSTLY IHL, INITIAL EXCITATION FOLLOWED BY HEADACHE, DIZZINESS, VOMITING, DELIRIUM, SEVERE EXPOSURE MAY SEE TREMORS, BLURRED VISION, SHALLOW RESP, CONVULSIONS

CHRONIC SYMPTOMS: ANOREXIA, DROWSINESS, ANEMIA, BLEEDING UNDER SKIN, REDUCED BLOOD CLOTTING;LIVER, KIDNEY, BONE MARROW DAMAGE, LEUKEMIA

FIRST AID

INHALATION: REMOVE TO FRESH AIR, GIVE ARTIFICAL RESPIRATION IF NEEDED, SEEK MEDICAL ATTENTION

EYE CONTACT: FLUSH/RINSE WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING; WASH WITH SOAP AND WATER

INGESTION: DO NOT INDUCE VOMITING, GIVE WATER OR MILK, GET MEDICAL ATTENTION IMMEDIATELY

DISPOSAL/WASTE TREATMENT:

TOXIC FUMES OF CARBON DIOXIDE, CARBON MONOXIDE

REFERENCES CONSULTED: [ ] VERSCHUERAN [ ] MERCK INDEX [X] HAZARDLINE [X] ACGIH [ ] TOXIC & HAZARDOUS SAFETY MANUAL [ ] CHRIS [ ] SAX
[X] NIOSH/OSHA POCKET GUIDE
[ ] OTHER: CHRIS (VOL III), SAX, ALDRICH, RTECS

ecology and environment, inc.

JOB NO ZT2051 HAZARD EVALUATION OF CHEMICALS PREPARATION/UPDATE DATE 5-23-90

CHEMICAL NAME: POLYCHLORINATED BIPHENYL

CAS NUMBER: 53469-21-9 DOT NAME/ID NO.: RQ:

SYNONYMS: AROCHLOR 1242/42% CHLORINE, CHLORODIPHENYL

CHEMICAL AND PHYSICAL PROPERTIES:

CHEMICAL FORMULA: C12H7C13 MOLECULAR WEIGHT: 258 PHYSICAL STATE: DARK LIQUID SPG/D 1.3 SOLUBILITY (H20): INSOLUBLE

VAPOR PRESS: 001 MM FREEZING POINT: -2 F BOILING POINT: 617-691 F FLASH POINT: 349 F FLAMMABLE LIMITS: UNKNOWN

ODOR CHARACTERISTICS:

INCOMPATABILIITIES: STRONG OXIDIZERS

BIOLOGICAL PROPERTIES:

IDLH: TLV-TWA: 1 MG/M3 PEL: 1 MG/M3 ODOR THRESHOLD:

HUMAN (LCLO): 10 MG/M3 RAT/MOUSE (LC50): AQUATIC: 278 PPM

CARCINOGEN: SUS-HUM TERATOGEN: MUTIGEN: ANIM-POS

ROUTE OF EXPOSURE: [X] INHALATION [X] EYE CONTACT [X] SKIN CONTACT [X] INGESTION

HANDLING RECOMMENDATIONS (PERSONAL PROTECTIVE MEASURES):

ANY DETECTABLE LIMIT - SCBA, EXCEL-VITON;GOOD BUTYL, VINYL, NITRILE; POOR-NEOPRENE, SAFETY GOGGLES, CLOTHING TO AVOID CONTACT

MONITORING RECOMMENDATIONS:

HEALTH HAZARDS:

ACUTE SYMPTOMS: IRRITATION OF EYES, NOSE, THROAT, CAN CAUSE VOMITING, EDEMA, ANOREXIA, NAUSEA, ABDOMINAL PAIN, FATIGUE

CHRONIC SYMPTOMS: CHLORACNE FROM PROLONGED SKIN CONTACT, ACUTE & CHRONIC EXPOSURE MAY CAUSE LIVER DAMAGE OR CANCER

FIRST AID

INHALATION: REMOVE TO FRESH AIR, GARGLE WITH WATER AND USE SEDATIVE COUGH MIXTURE

EYE CONTACT: FLUSH/RINSE WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING; WASH WITH SOAP AND WATER

INGESTION: GIVE LARGE QUANTITIES OF SALT WATER; INDUCE VOMITING; SEEK MEDICAL ATTENTION

DISPOSAL/WASTE TREATMENT:

REFERENCES CONSULTED: [ ] VERSCHUERAN [ ] MERCK INDEX [ ] HAZARDLINE [X] ACGIH [ ] TOXIC & HAZARDOUS SAFETY MANUAL [X] CHRIS [X] SAX
[X] NIOSH/OSHA POCKET GUIDE
[ ] OTHER: RTECS

ecology and environment. inc.

JOB NO ZT2051 HAZARD EVALUATION OF CHEMICALS PREPARATION/UPDATE DATE 5-8-90

CHEMICAL NAME: ASBESTOS

CAS NUMBER: 1332-21-4 DOT NAME/ID NO.: RQ:

SYNONYMS: CHRYSOTILE, AMOSITE, CROCIDOLITE, TREMOLITE, ANTHOPHYLLITE, ACTINOLITE

CHEMICAL AND PHYSICAL PROPERTIES:

CHEMICAL FORMULA: VARIES MOLECULAR WEIGHT: N/A PHYSICAL STATE: SOLID SPG/D SOLUBILITY (H20): NON-SOLUBLE

VAPOR PRESS: N/A FREEZING POINT: N/A BOILING POINT: N/A FLASH POINT: N/A FLAMMABLE LIMITS: N/A

ODOR CHARACTERISTICS: N/A

INCOMPATABILIITIES: NONE

BIOLOGICAL PROPERTIES:

IDLH: TLV-TWA: 0.1 fiber/cc PEL: 0.1 fiber/cc ODOR THRESHOLD:

HUMAN (LCLO): RAT/MOUSE (LC50): AQUATIC:

CARCINOGEN: TERATOGEN: MUTIGEN:

ROUTE OF EXPOSURE: [X] INHALATION [X] EYE CONTACT [X] SKIN CONTACT [X] INGESTION

HANDLING RECOMMENDATIONS (PERSONAL PROTECTIVE MEASURES):

HEPA FILTERS WITH AIRPURIFYING UP TO OIL FIBERS/CC;AIR SUPPLIED, FULL BODY DISPOSABLE COVERING, INC HOOD, GLOVES & BOOTS. IF NOT IN FULL FACE PIECE RESPIRATOR WEAR EYE PROTECTION

MONITORING RECOMMENDATIONS:

HEALTH HAZARDS: ASBESTOSIS, LUNG CANCER & POSSIBLE GI TRACT CANCER, MESOTHELIOMA AND CARCINOGENIC PROPERTIES GREATLY ENHANCED BY CIGARETTE SMOKE. EXPOSURE TO ASBESTOS CAN CAUSE SHORTNESS OF BREATH, CHEST OR ABDOMINAL PAIN AND IRRITATION OF THE SKIN AND MUCOUS

ACUTE SYMPTOMS: NONE

CHRONIC SYMPTOMS: ASBESTOSIS, LUNG CANCER & POSSIBLE GI TRACT CANCER, MESOTHELIOMA AND CARCINOGENIC PROPERTIES GREATLY POTENTIATED BY CIGARETTE SMOKE

FIRST AID

INHALATION: REMOVE TO FRESH AIR, GIVE ARTIFICAL RESPIRATION IF NEEDED, SEEK MEDICAL ATTENTION

EYE CONTACT: FLUSH/RINSE WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES
CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH ASBESTOS

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING; WASH WITH SOAP AND WATER

INGESTION: DO NOT INDUCE VOMITING; SEEK MEDICAL ATTENTION

DISPOSAL/WASTE TREATMENT:

REFERENCES CONSULTED: [ ] VERSCHUERAN [ ] MERCK INDEX [ ] HAZARDLINE [X] ACGIH [ ] TOXIC & HAZARDOUS SAFETY MANUAL [ ] CHRIS [ ] SAX
[X] NIOSH/OSHA POCKET GUIDE
[ ] OTHER: CHRIS (VOL III)

SITE SAFETY MEETING
(Must be filled out by Site Safety Officer at the site)

Project 2100 S Rostner TDD: S05-9602-002/3/4 PAN #:

Site Safety Officer : D. Robin Date 2-8-96 Time 0800

Address:

Type of Work: EXCAVATION / SOIL SAMPLING

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment:

Chemical Hazards: POSSIBLE: METALS, ORGANICS, PCBs, ASBESTOS

Physical Hazards: MACHINERY, SLIP / TRIP / FALL

Radiation Hazards: NONE

Emergency Procedures:

Hospital/Clinic: MT. SINAI Telephone:

Hospital Address: 1500 S. California. Emergency Telephone #:

Special Equipment:

Others:

Checklist

1. Emergency information reviewed? Y / N and made familiar to all team members? Y / N
2. Route to nearest hospital explained and reviewed? Y / N and its location known to all team members? Y /
3. Site safety plan readily available and its location known to all team members? Y / N

The site safety meeting shall be attended by all personnel who will be working within the site area. Daily informational update meetings will be held when site tasks and conditions change.

ATTENDANCE

PRINT NAME	SIGNATURE	DATE
Donovan Robin	Donovan Robin	2/8/96
Karen Rydzewski	Karen Rydzewski	2/8/96
Donovan Robin	Donovan Robin	2-15-96
Nabil Fayoumi	Nabil Fayoumi	2-15-

MEETING CONDUCTED BY:

Revised (4/3/92)